



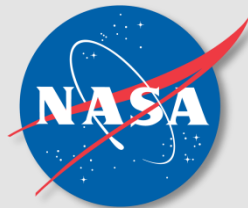
NOAA/NASA

Annual Global Analysis for 2015

2015 was by far the warmest year in the record

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January 2016

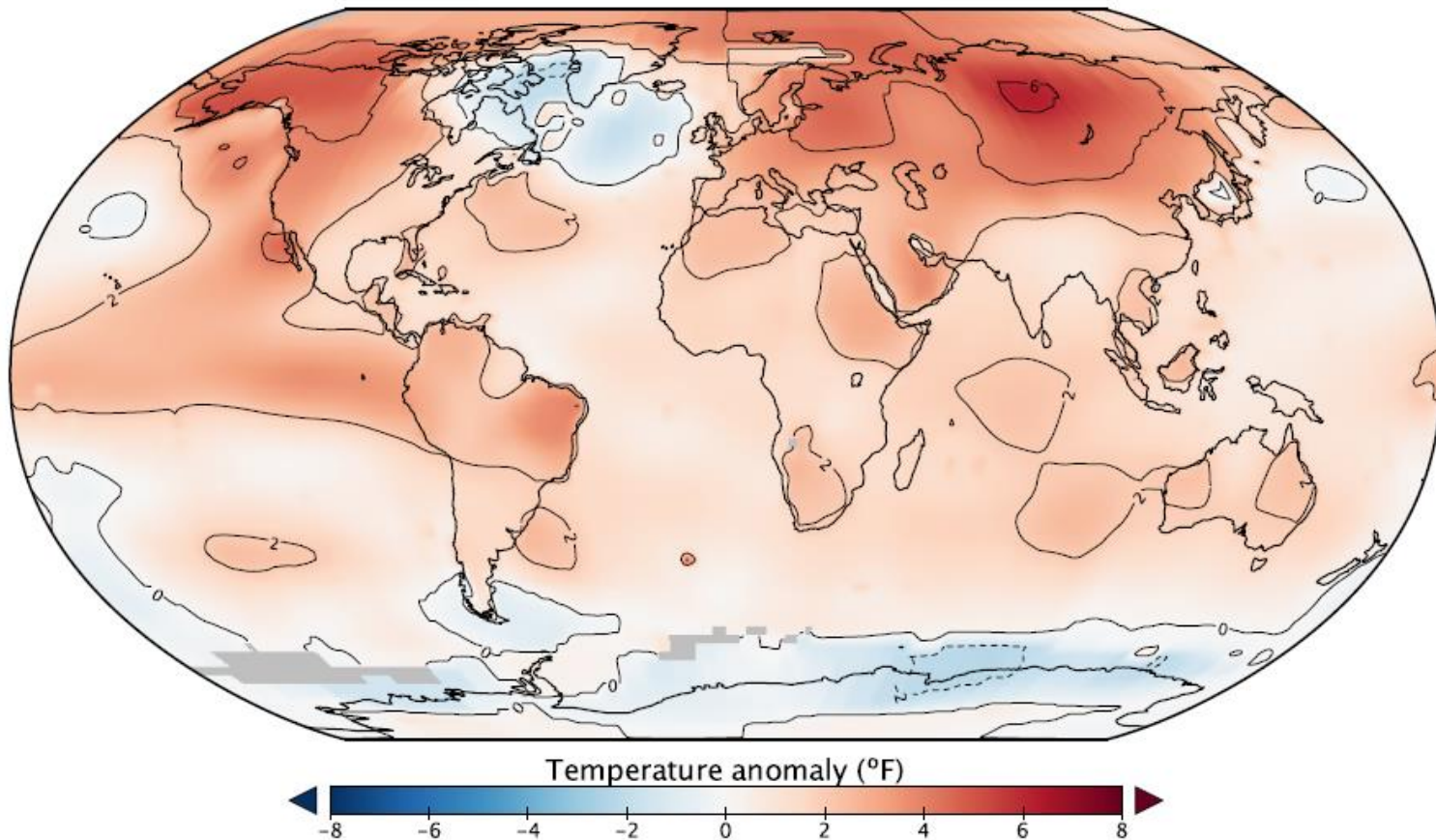
NASA 2015 Global Temperature

2015:
0.87°C / 1.57°F
above 1951-80
average

Warmest year of
NASA GISTEMP
record

GISTEMP Annual 2015

Baseline 1951-1980



NOAA 2015 Global Temperature

0.90°C / 1.62°F above 1901-2000 average; warmest year of record

USA (CONUS)

2nd warmest year
3rd wettest year

Tropical Pacific

El Nino develops

NE Pacific

The “blob” persists

Continental Temperatures

records begin 1910

Asia, S. America
warmest year

Africa, Europe
2nd warmest year

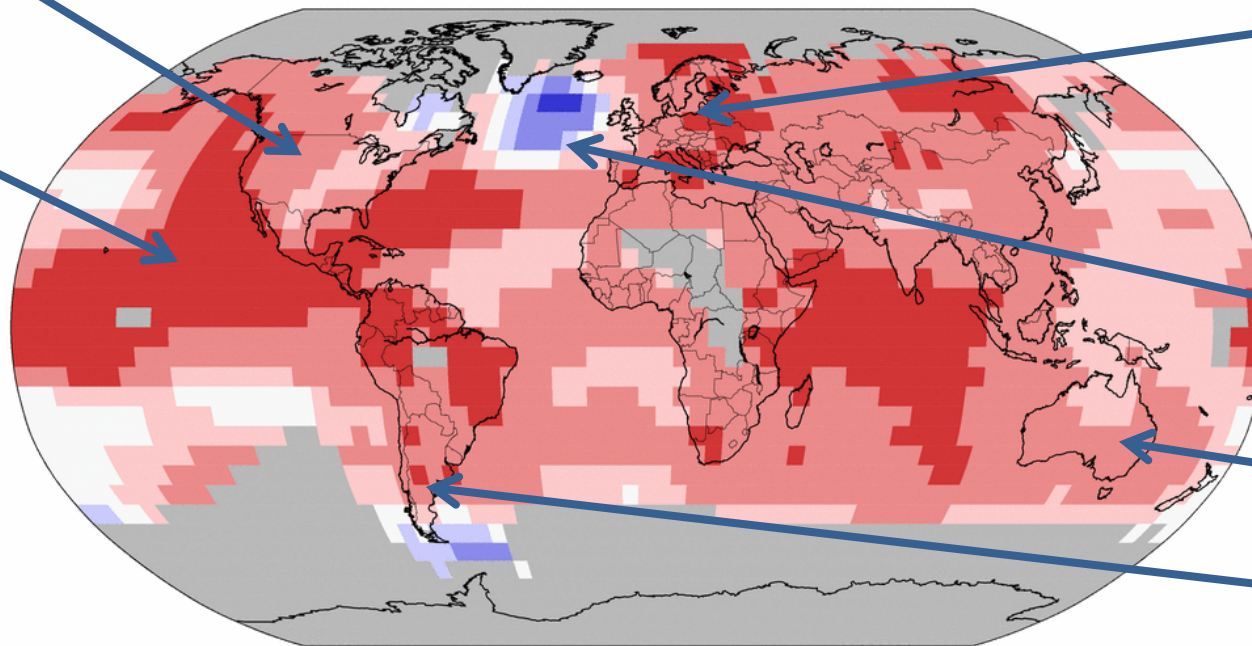
N. America
5th warmest year

Oceania
6th warmest year

Land & Ocean Temperature Percentiles Jan–Dec 2015

NOAA's National Centers for Environmental Information

Data Source: GHCN–M version 3.3.0 & ERSST version 4.0.0



Record
Coldest

Much
Cooler than
Average

Cooler than
Average

Near
Average

Warmer than
Average

Much
Warmer than
Average

Record
Warmest

Spain, Finland
warmest year

Austria, France,
Germany,
Netherlands
among five
warmest years

North Atlantic
Persistent cool
anomaly

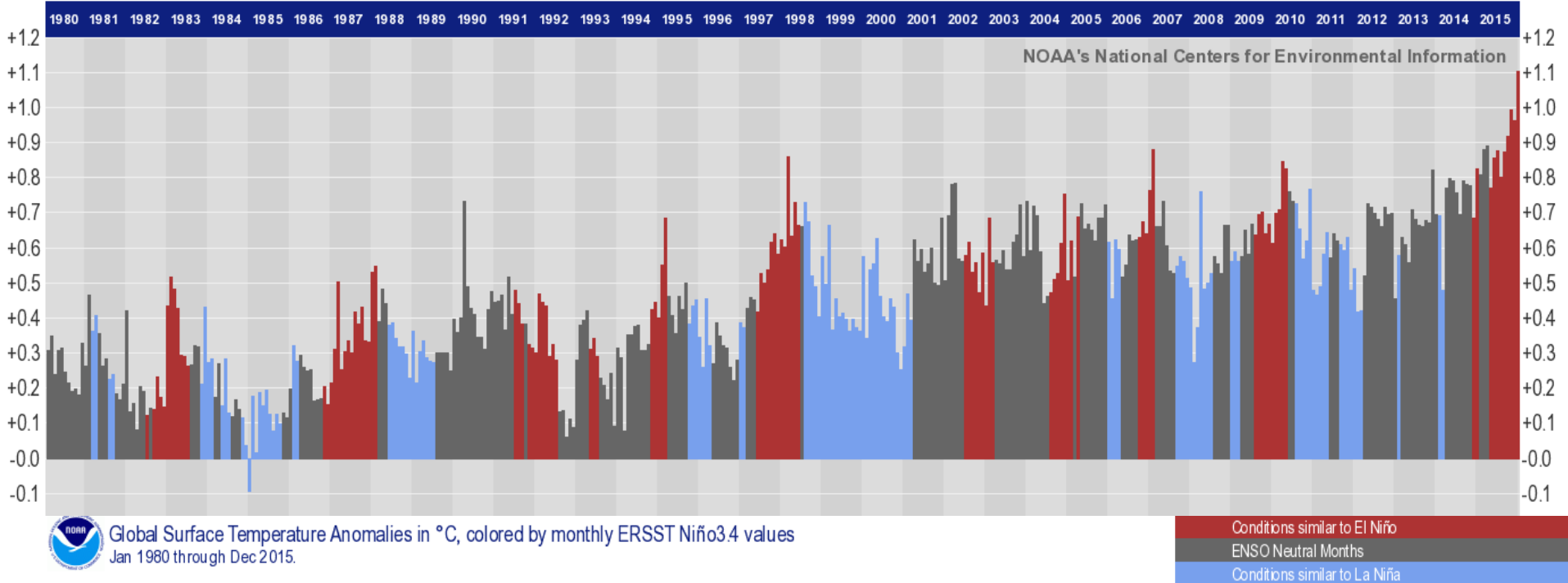
Australia
5th warmest year

Argentina
2nd warmest year



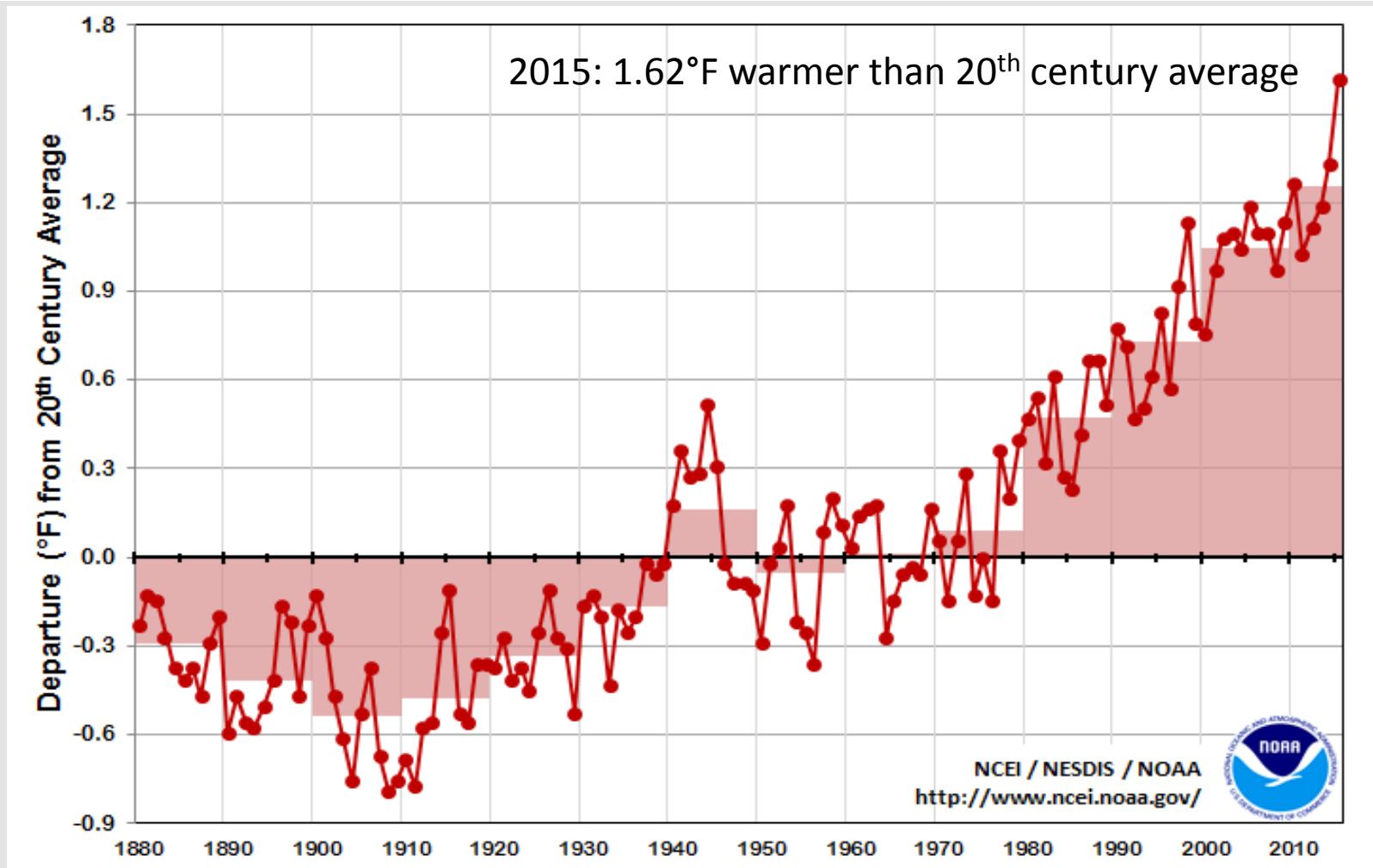
Mon Jan 11 06:58:03 EST 2016

El Niño and Global Temperature



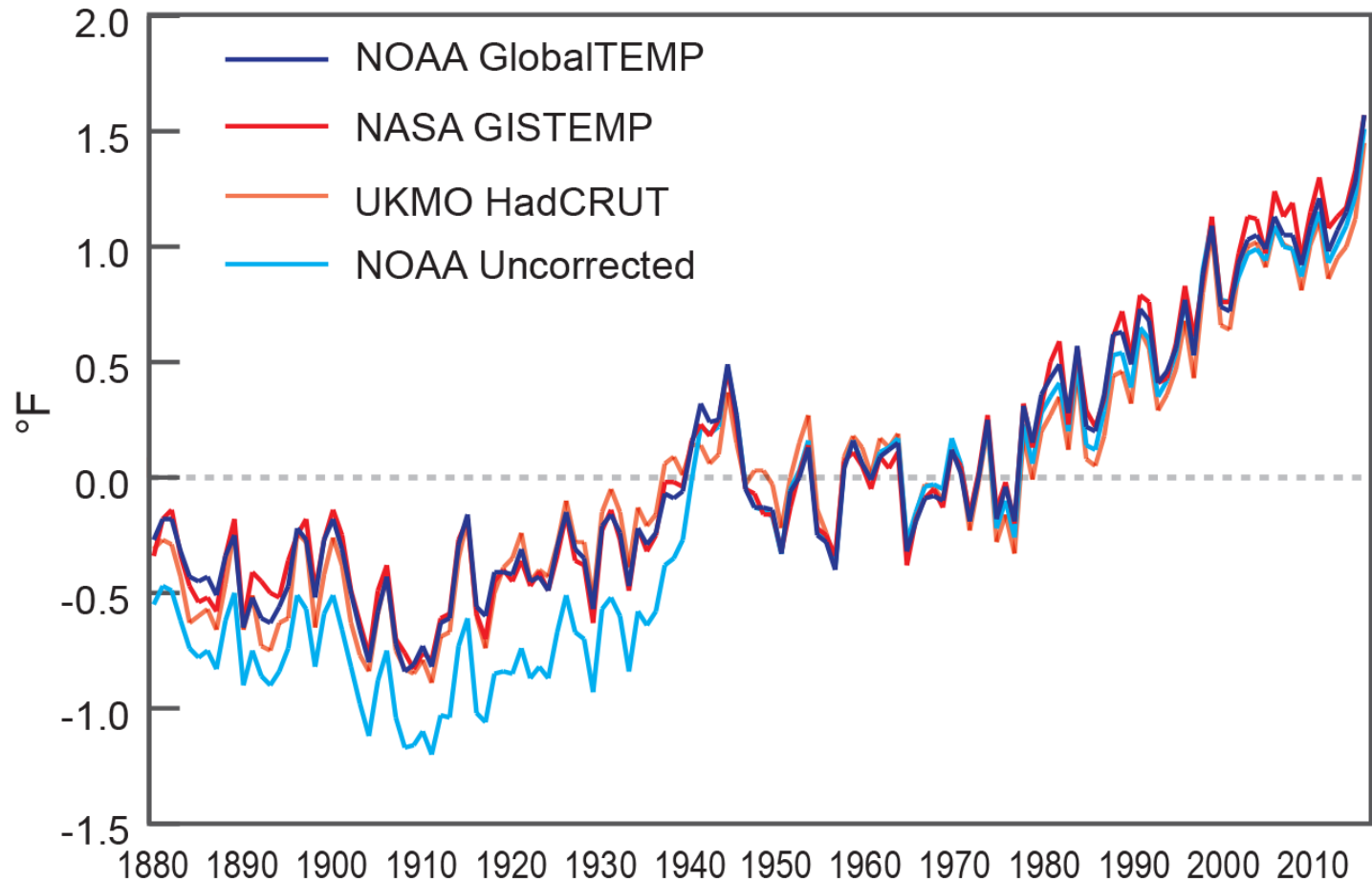
Months with La Niña sea-surface temperature conditions in blue
Months with El Niño sea-surface temperature conditions in red

Global Temperature Time Series



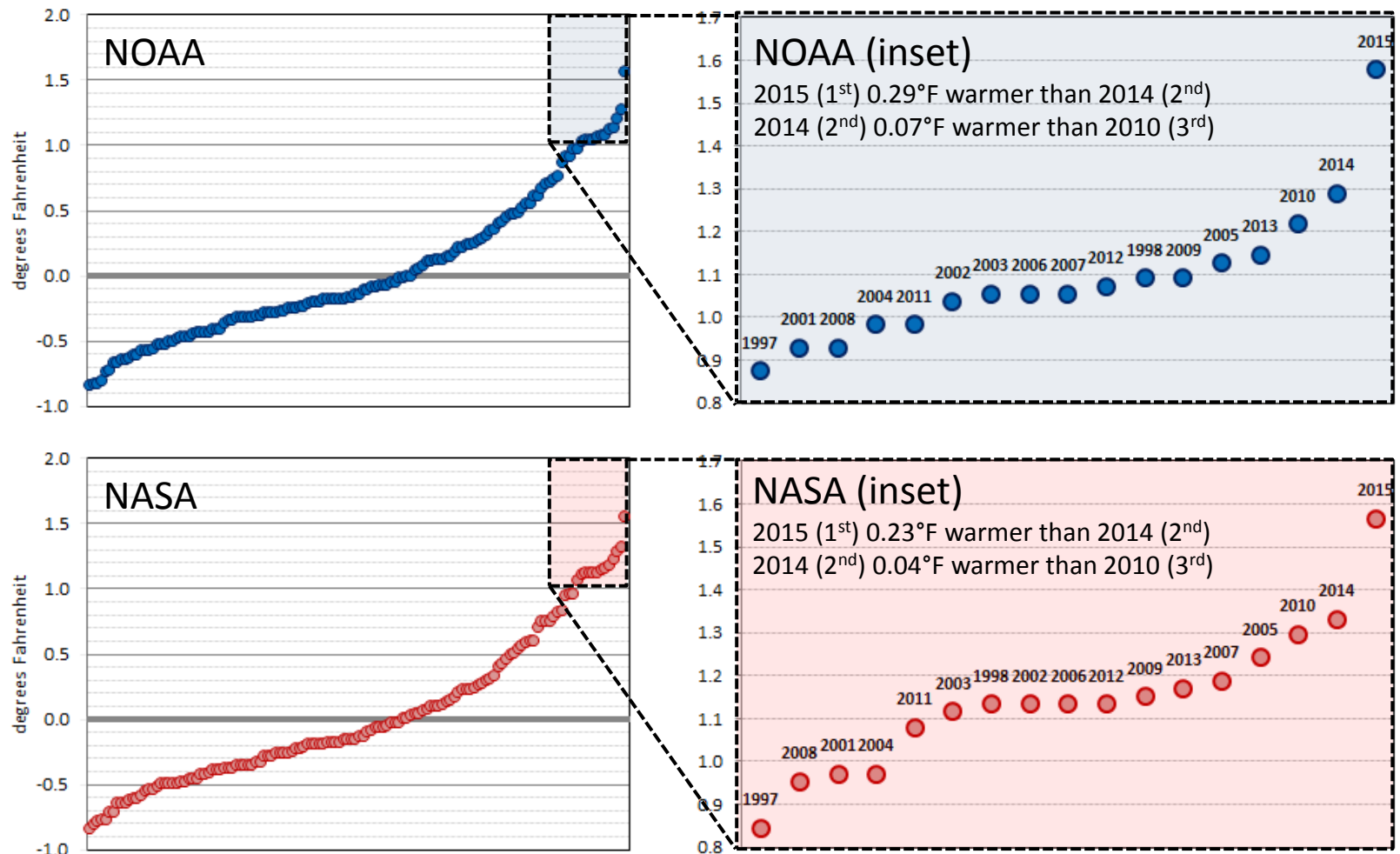
Global Analyses Side by Side

NASA, NOAA, MetOffice: relative to a common 1951 – 80 base period

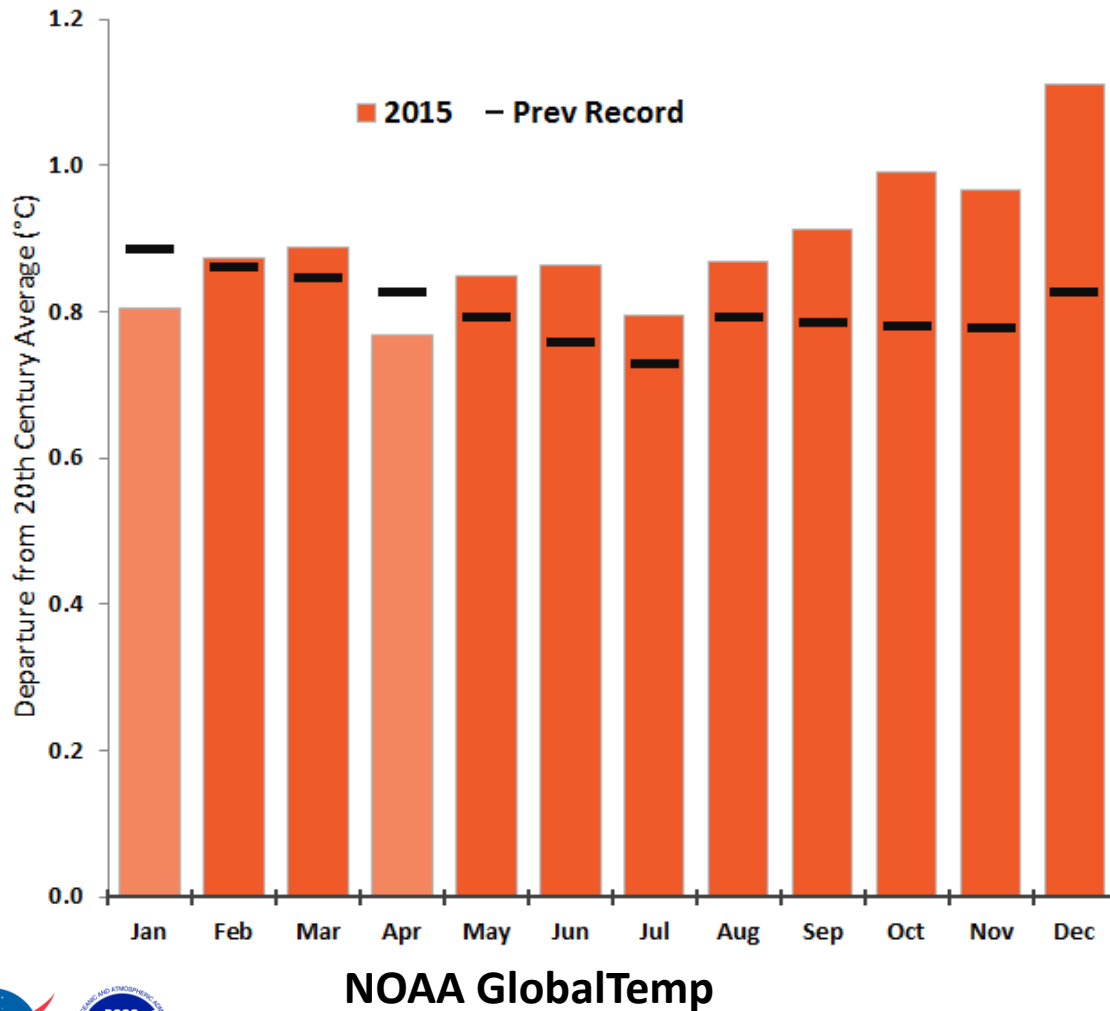


2015 Versus the Warmest Years

annual temperature departures ranked coolest to warmest
using a common 1951-80 base period



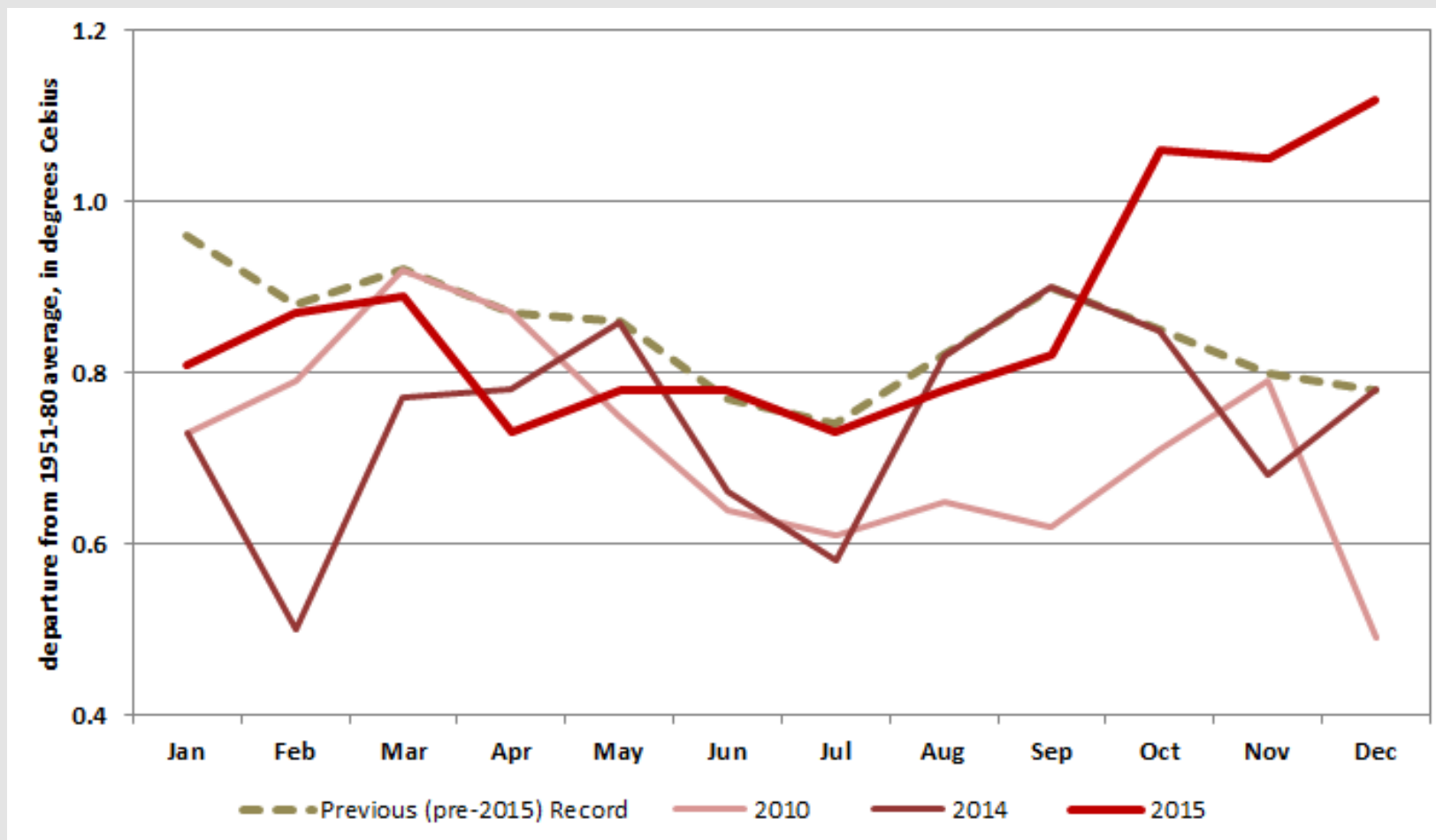
2015 by the Month



Ten of 2015's monthly global temperatures tied or broke existing records

2015 by the Month

Comparison to 2014, 2010 and previous warmest months on record



NASA GISTEMP

Looking at the Atmosphere

- Middle Troposphere (37 yr record)

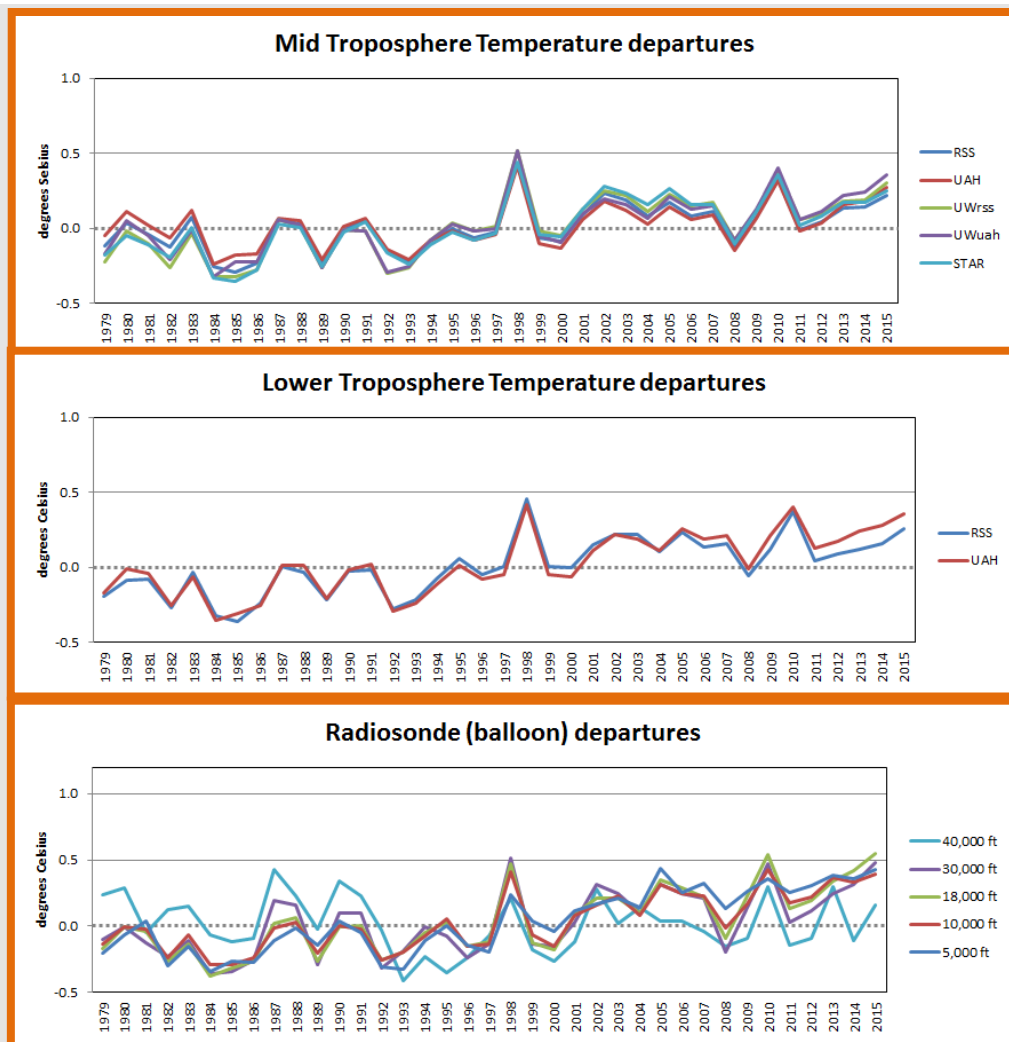
- UAH: 3rd warmest
- UW-UAH: 3rd warmest
- RSS: 4th warmest
- UW-RSS: 3rd warmest
- NESDIS STAR: 5th warmest

- Lower Troposphere (37 yr record)

- UAH: 3rd warmest
- RSS: 3rd warmest

- Radiosonde data (58 yr record)

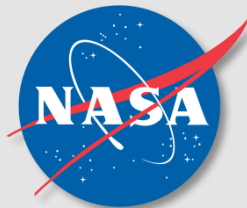
- ~5,000 ft (850mb): 2nd warmest
- ~10,000 ft (700mb): 3rd warmest
- ~18,000 ft (500mb): warmest
- ~30,000 ft (300mb): 2nd warmest
- ~40,000 ft (200mb): 14th warmest



Questions?

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